

F a c t s

GROUNDWATER QUALITY

Both natural processes and human activity can impact groundwater. The difference is that natural processes can either improve groundwater quality or degrade its aesthetic qualities. Human activity, for the most part, contaminates groundwater. With care, the impact of human activities can be reduced.

As groundwater percolates downward through formations above the aquifer, water quality may be affected in the following ways:

- the water dissolves minerals from the geologic materials it passes through, E.g., calcium carbonate in limestone can make recharge water hard
- organisms such as bacteria or protozoa may die off or be filtered out
- some substances in the recharge water, e.g., metals and phosphorus, may be removed by charged soil particles – thus improving the groundwater

The following characteristics refer most often to shallow aquifers

- the age of the groundwater determines its contact time with geologic materials, which affects its mineral content, e.g., the longer groundwater is in contact with limestone, the higher its calcium level
- bacteria may chemically alter nitrate or sulphur concentrations – this process will change the quality of groundwater, for better or worse
- groundwater temperature is affected by the depth of the aquifer
- bacteria may die off or be filtered out or remain dormant